

## ABSTRACT OF THE DISCLOSURE

### APPARATUS AND METHOD FOR FLEXIBLE HEATING COVER ASSEMBLY FOR 5 THERMAL CYCLING OF SAMPLES OF BIOLOGICAL MATERIAL

A flexible heating cover assembly for an apparatus for heating samples of biological material with substantial temperature uniformity includes a housing having a plurality of engageable enclosure components; a resistive heater having a plurality of heater element 10 areas; a heater backing plate providing stability to the resistive heater; a force distribution system that distributes a force over the heater backing plate; and a support plate providing stiffness for the force distribution system, wherein the arrangement of the resistive heater, the heater backing plate, the force distribution system and the support plate provide substantial temperature uniformity among a plurality of sample tubes for receiving samples of biological 15 material. The flexible heating cover assembly improves the uniformity, efficiency, quality, reliability and controllability of the thermal response during thermal cycling of the biological material.